The Economic Benefits of Regional Rail Investment in the Metro Hartford-Springfield

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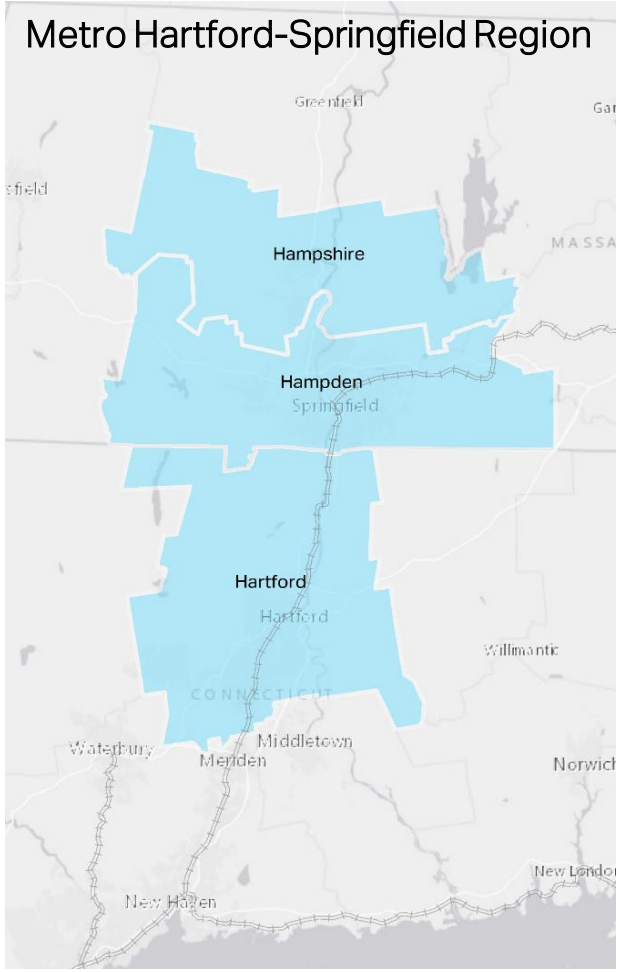
April 28, 2021

AECOM

Introduction

- Analyze the potential economic benefits of proposed rail improvements which have clear potential to economically reconnect Hartford and Springfield to the Northeast Corridor (NEC):
  - Completion of the Hartford Line between Hartford and Springfield
  - East-West Rail Improvements in Massachusetts within the Worcester-Springfield Corridor
- These projects would reconstitute the former **Inland Route**; regular service from Boston to New York via Worcester, Springfield, and Hartford

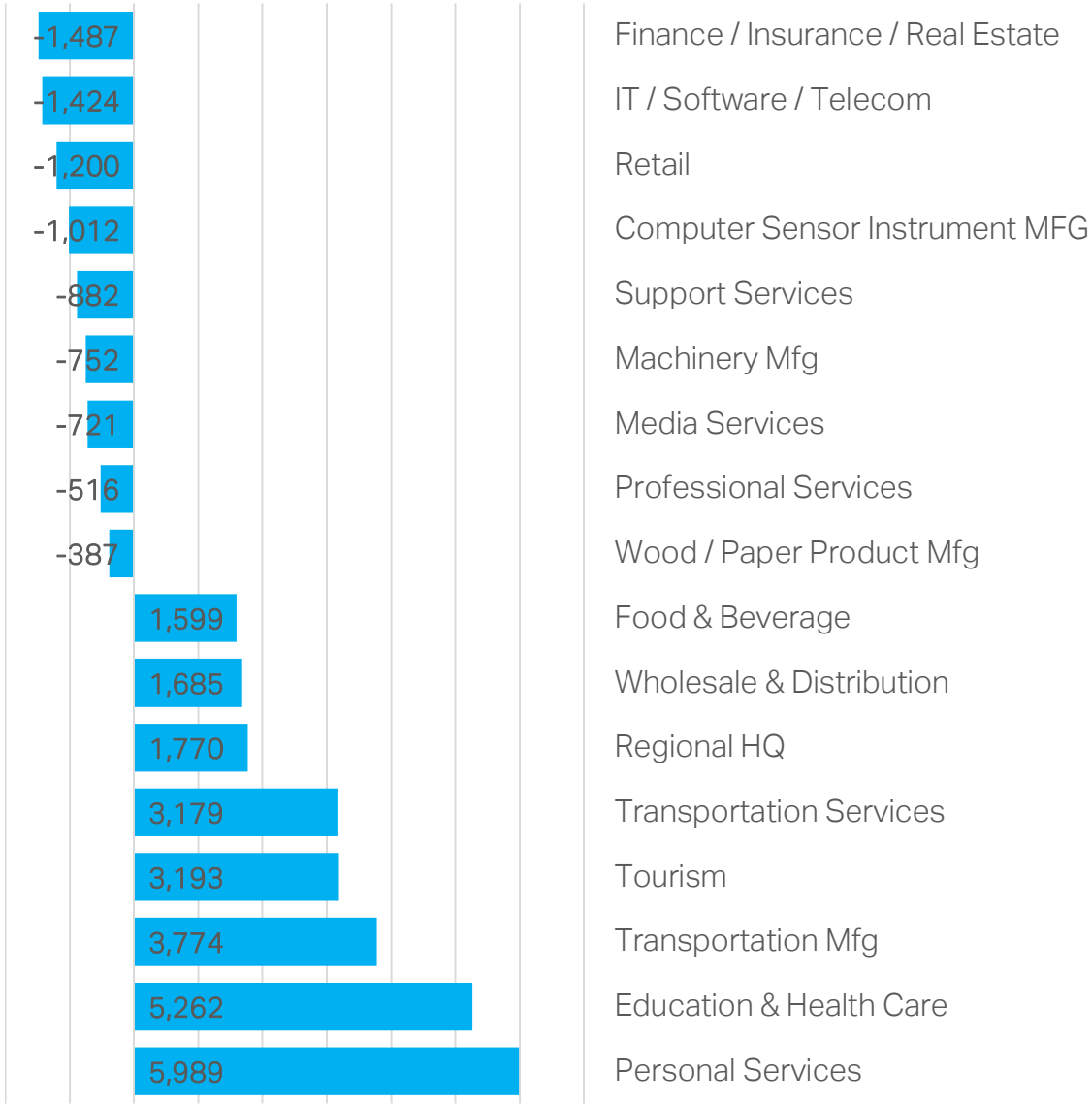


The project study area focused on the counties of Hartford, CT; Hampden, MA; and Hampshire, MA. Collectively, the study area is referred to as Metro Hartford-Springfield.

Economic Context

- Metro Hartford-Springfield is economically consequential
  - 1.6 million residents / total output in excess of $120 billion.
- While the region has been defined as a center for insurance, employment has decreased since 2010, with a loss of about 1,500 positions.
- Professional services (LQ of 0.8) stands out as a sector which is under-represented across the region.

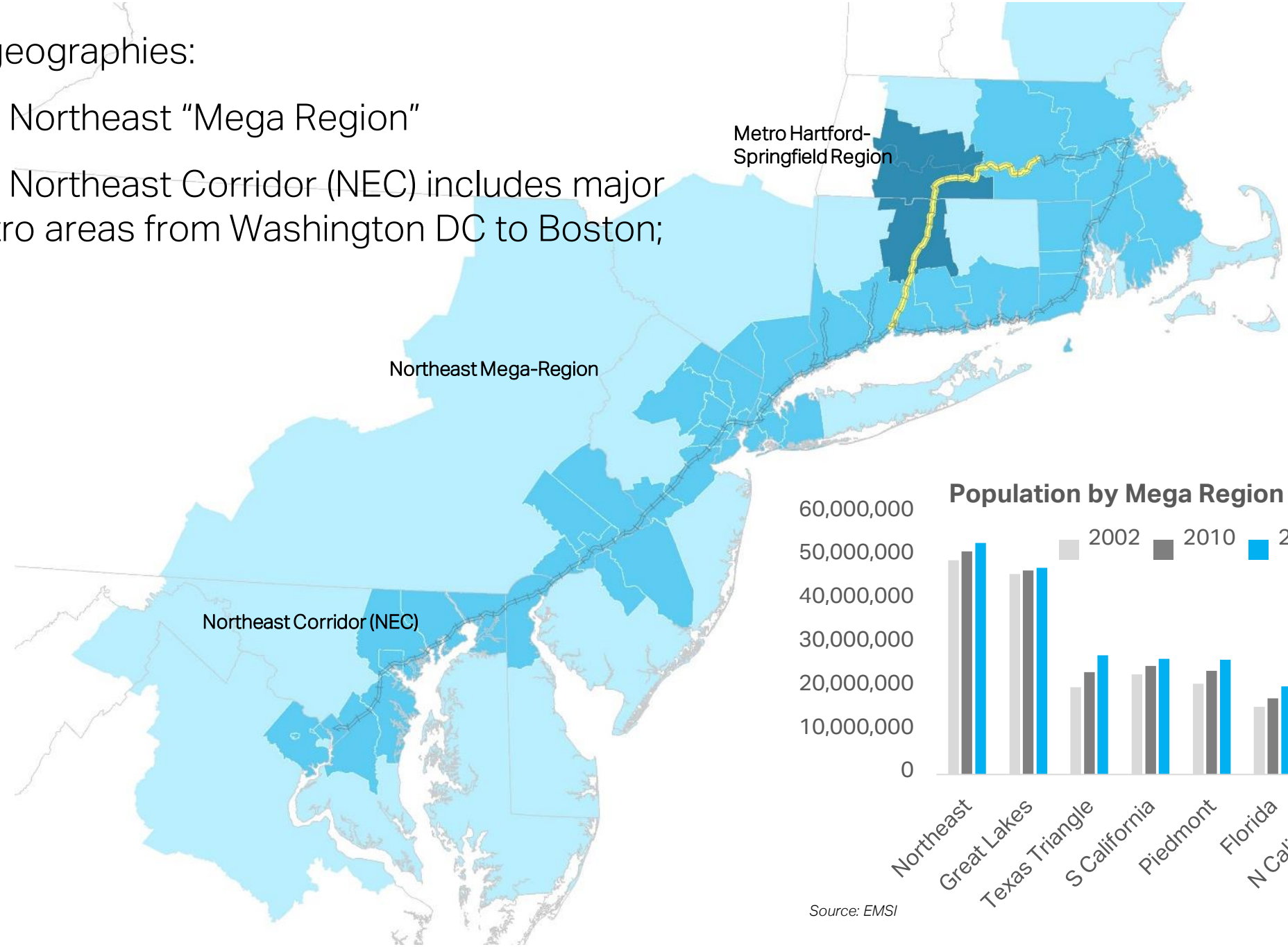
Metro Hartford-Springfield Job Creation, 2015-2019

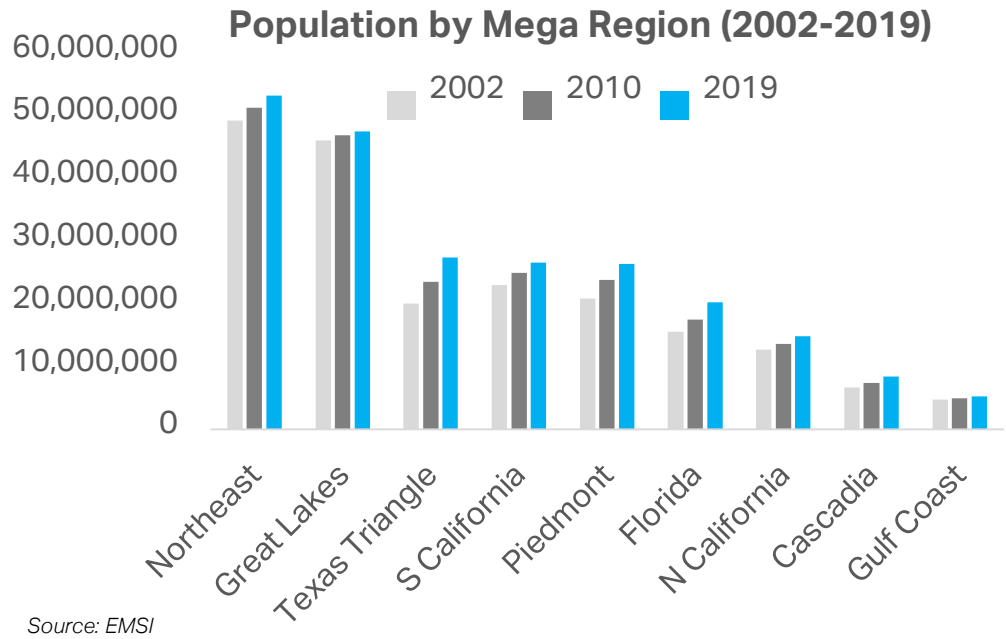


Geographic Context

Two geographies:

1. The Northeast "Mega Region"
2. The Northeast Corridor (NEC) includes major metro areas from Washington DC to Boston;

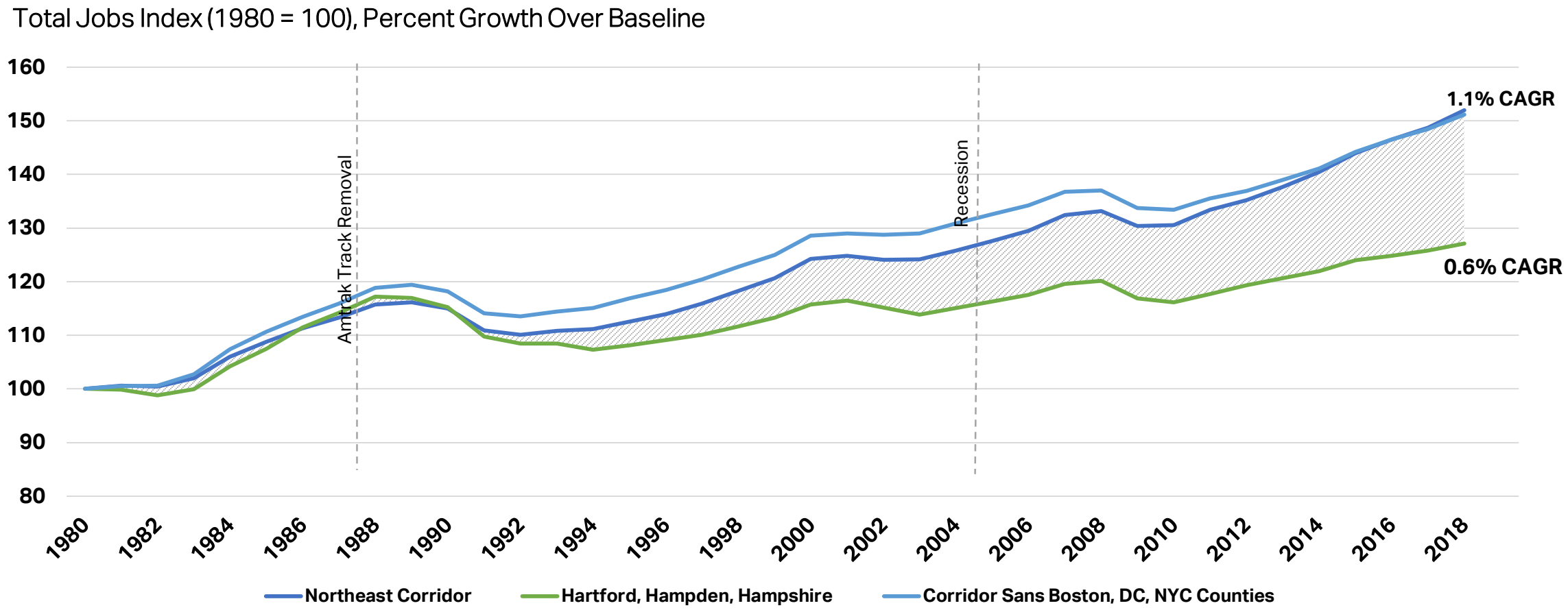




Source: EMSI

Economic Disconnect

- Since 1990, Metro Hartford-Springfield accelerated out of recession on a slower growth trajectory (0.6% annual job growth); 130,000 jobs not created since the early 1990's.
- Removal of Amtrak rail in the mid-1980' restricted Metro Hartford-Springfield's access to sectors which have experienced faster NEC growth, and are significantly more reliant on transit



Source: Bureau of Economic Analysis, 2020

In context with NEC trends, a distinctly slower pace of long-term Metro Hartford-Springfield economic performance comes into sharper focus:

- Metro Hartford-Springfield has become more reliant on specialty industries for job growth compared to the more economically diversified NEC
- The Metro Hartford-Springfield economy has evolved differently compared to NEC averages with consequential gaps in professional services and finance.

Top 10 Most Concentrated Industries, 2019

Metro Hartford-Springfield		Northeast Corridor	
Industry	Location Quotient	Industry	Location Quotient
Cable and Other Subscription Programming	12.88	Securities /Commodity Brokerage	3.12
Hardware Manufacturing	7.14	Securities /Commodity Exchanges	2.75
Aerospace Parts Manufacturing	6.93	Other Financial Investment Activities	2.71
Cutlery and Hand tool Manufacturing	6.84	Apparel, Piece Goods Wholesaler	2.48
Insurance Carriers	5.61	Specialty Hospitals	2.45
School and Employee Bus Transportation	4.98	Colleges, Universities	2.38
Urban Transit Systems	3.83	School / Bus Transportation	2.17
Spring and Wire Product Manufacturing	3.83	Social Advocacy Organizations	2.08
Engine, Turbine, and Transmission MFG	3.55	Other Information Services	2.07
Interurban and Rural Bus Transportation	3.41	Home Health Care Services	2.07

Source: EMSI

Professional Services Industries, 2019 Data

Description	Metro Hartford-Springfield LQ	NEC LQ
Legal Services	1.02	1.75
Accounting, Tax, and Payroll Services	0.81	1.42
Architectural, Engineering, and Related Services	0.89	1.03
Specialized Design Services	0.49	1.42
Computer Systems Design and Related Services	0.87	1.46
Management, Scientific, and Technical Services	0.62	1.47
Scientific Research and Development Services	0.37	1.98
Advertising, Public Relations, and Related Services	0.81	2.00

Metro Hartford-Springfield has effectively **"missed out"** on consequential job growth in finance, management, and professional services) where workers are more likely to use public transportation.

Industry Sector Annualized Growth Rates, Metro Hartford-Springfield Region / Northeast Corridor

Industry Sector	Metro Hartford-Springfield		NEC		Transit Ridership Shares		
	Growth Since 2000	Growth Since 2010	Growth Since 2000	Growth Since 2010	Metro Hartford-Springfield	US Average	NEC
Ag, Const, Mfg, Wholesale, Transport, Utilities	-0.8%	0.4%	-0.4%	0.3%	1.6%	2.7%	15.6%
Information, Finance, Professional Svcs	0.1%	0.0%	0.7%	1.1%	2.7%	7.7%	29.4%
Education and Healthcare	1.4%	0.6%	1.7%	0.9%	2.6%	4.7%	20.6%
Retail Trade	0.1%	-0.3%	0.4%	-0.1%	4.2%	4.5%	21.5%
Other Services	0.3%	0.3%	0.6%	0.3%	2.0%	4.9%	22.9%
Arts, Entertainment	1.4%	0.3%	2.2%	1.4%	6.9%	7.0%	29.3%
Local, State, Federal Government	-0.4%	-0.2%	0.4%	-0.2%	1.3%	5.1%	22.0%

Source: ACS, 2019

Covid Impacts

Trends favoring work from home have been accelerating for more than 10 years, particularly in metro areas with limited legacy transit infrastructure. Two trends are apparent:

- Metros with "legacy" transit (Chicago, NYC, Boston, San Francisco) have seen slower growth in work from home, in part because more robust transit systems enable faster commutes.
- Dallas, Atlanta or Charlotte have more limited transit infrastructure and have tended to see growth in trips by car, more congestion, and higher rates of telecommute.

Journey to Work Trends, Respective Downtowns, 2000-2016

Central Area	Transit Share 2016	% Change in Telecommute Share 2000-2016	2016 Drive Share
NYC	79.7%	-1.0%	9.1%
Chicago	55.9%	6.0%	33.4%
Boston	53.5%	3.9%	35.6%
San Francisco	52.2%	2.6%	32.2%
D.C.	46.3%	6.6%	43.7%
Philadelphia	45.5%	3.8%	40.2%
Seattle	35.1%	5.4%	48.7%
Denver	22.4%	11.8%	66.3%
Los Angeles	20.2%	6.4%	74.6%
Houston	16.3%	10.2%	80.8%
Atlanta	13.5%	11.3%	80.1%
Miami	13.0%	12.4%	79.6%
Phoenix	9.8%	4.0%	86.4%
San Diego	9.6%	9.7%	80.1%
St. Louis	8.1%	10.6%	87.8%
Dallas	8.0%	11.4%	88.3%
Charlotte	7.8%	14.7%	85.5%
Detroit	4.9%	2.2%	90.7%

Source: US Census Transportation Products, Bureau of Labor Statistics

Economic Implications

An Economically Relevant, but Economically Isolated Regional Economy

While Metro Hartford-Springfield today ranks among the top 40 US metropolitan areas, the region remains defined by sluggish growth since the 1990's, representing about 130,000 jobs not created, with specific weakness in professional services employment.

Missing Regional Transit

Compared to the NEC and other US metro areas, the Metro Hartford-Springfield region has experienced a prolonged period of low rail / transit use—both in general and among those in professional, financial, information, and insurance jobs.

Housing Gap

The Metro Hartford-Springfield area has a relative abundance of older housing stock relative to NEC averages, with a significantly lower pace of new residential construction since 2010.

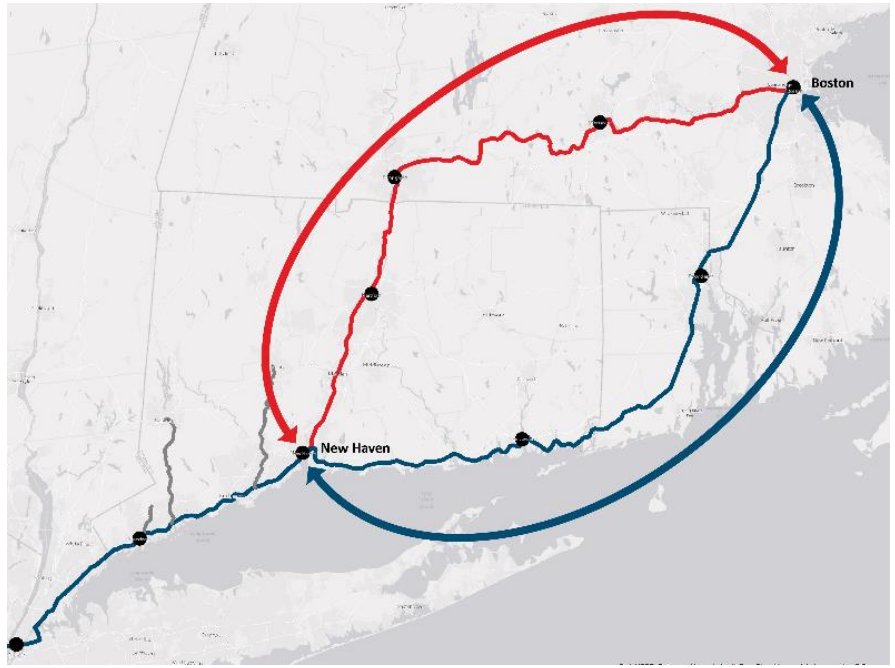
Equity Concerns

Hartford and Springfield support a combined poverty rate of 27.5% (12.5% NEC / 9.5% excluding NYC. Median household income is less than half that of NEC averages.

Regional Transit Infrastructure

This study evaluates the benefits of proposed rail improvements in the Connecticut Valley region:

- **Completion of the Hartford Line** from New Haven through Hartford and Springfield, covering infrastructure, electrification, **double tracking**, a new **Connecticut River Bridge**, sidings and new / enhanced stations.
- **East-West Rail Improvements** in Massachusetts within the Worcester-Springfield Corridor to resolve freight conflicts and other alignment challenges to expand passenger service from Springfield to Boston
- Proposed improvements would reconstitute the **Inland Route**—regular service from Boston to New York via Worcester, Springfield, & Hartford

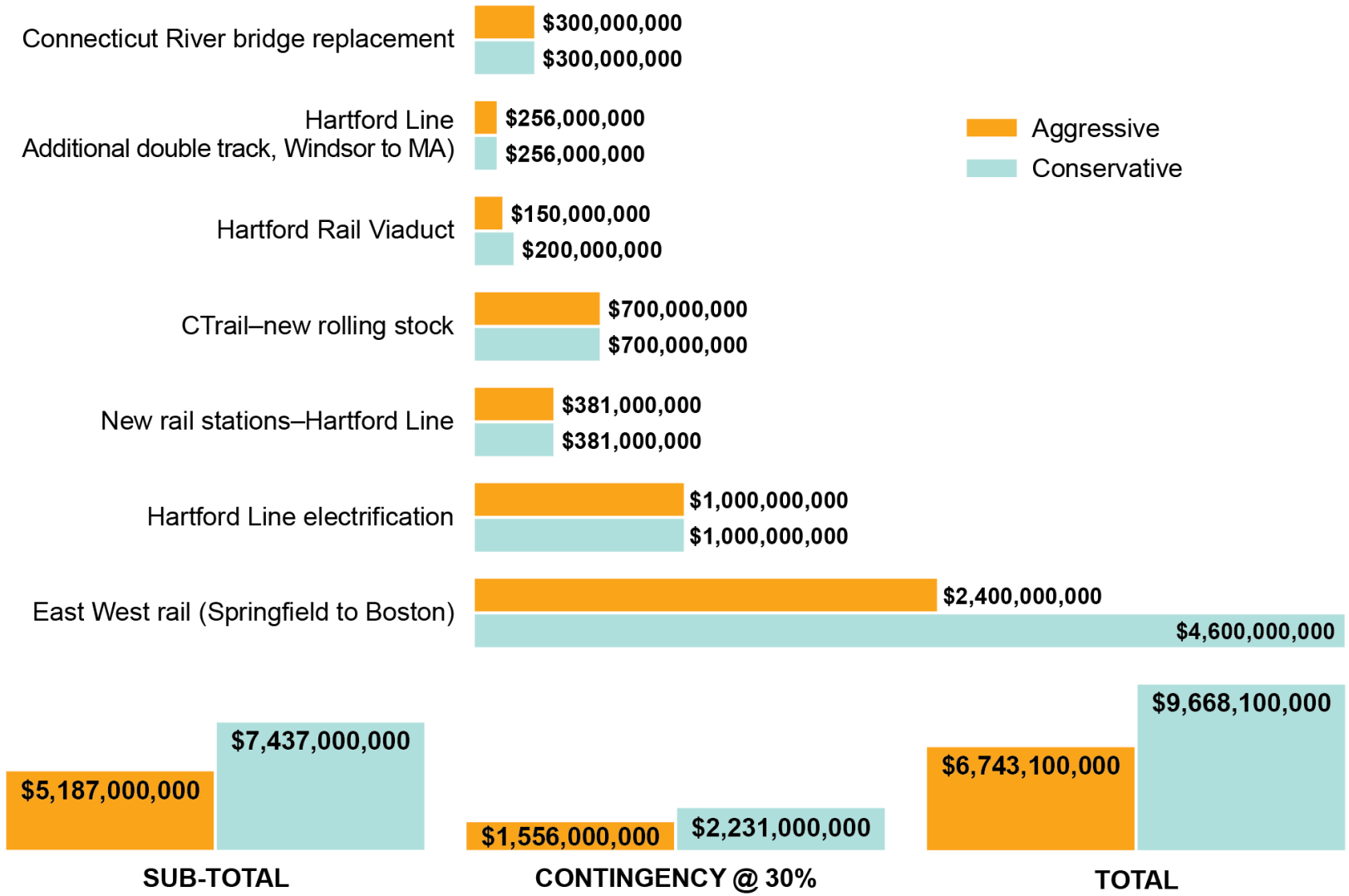


While the distance between New Haven and Boston is nearly identical between the NEC or NHHS/East-West corridor (150 miles), NEC travel time is significantly shorter on Acela (2 hrs 19 min) versus the Hartford Line and the Lakeshore limited (3 hours 51 minutes).

TABLE 5

Estimated Construction Costs, Regional Rail Improvements

(Current USD)



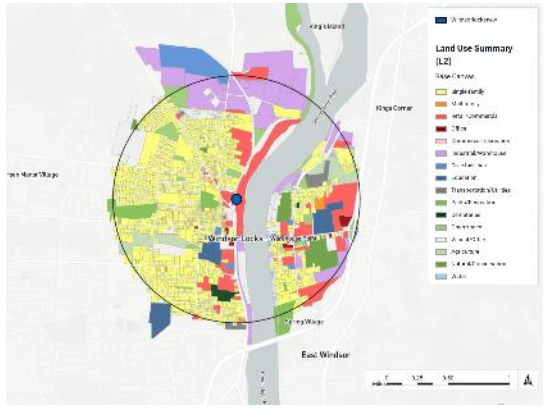
Regional TOD Capacity

AECOM completed a high-level analysis of TOD development potential for existing and proposed stations between New Haven, CT and Worcester, MA, focused on a one-mile radius around each station.

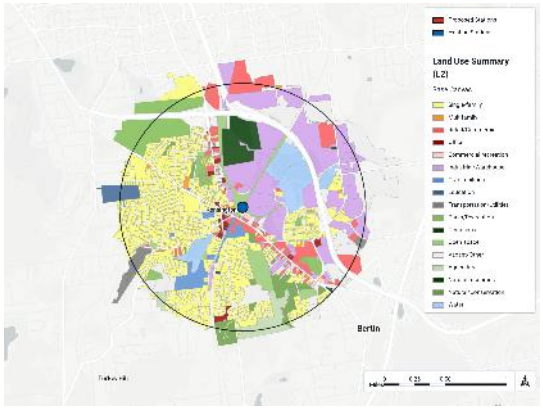
Regional TOD Capacity

Detailed land use summaries were developed for all existing and proposed stations. In situations where existing / proposed stations fall within a one-mile radius of each other, resulting analytics were consolidated to frame trends for the shared market

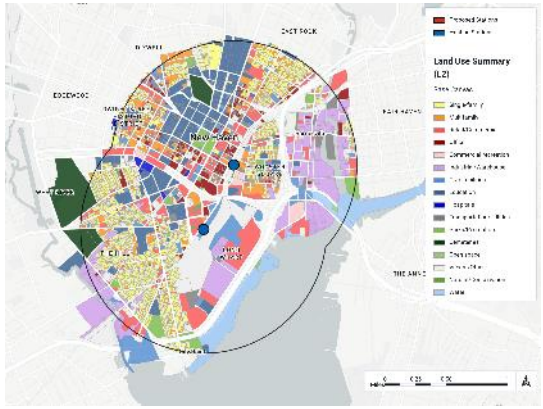
Windsor Locks



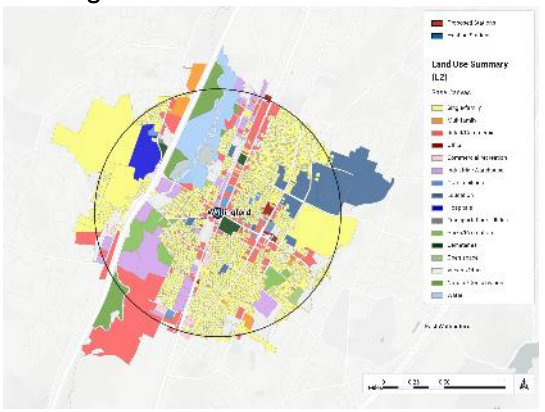
Berlin



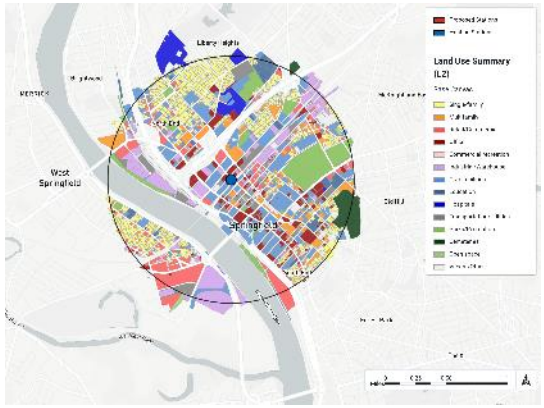
New Haven Union Station + State Street



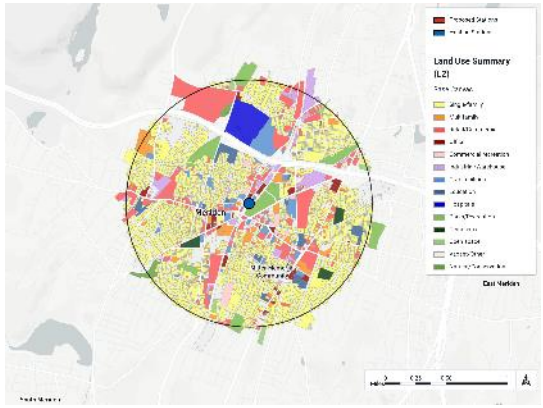
Wallingford



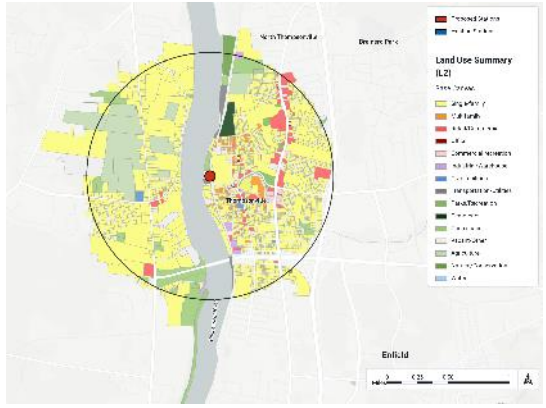
Springfield Union Station



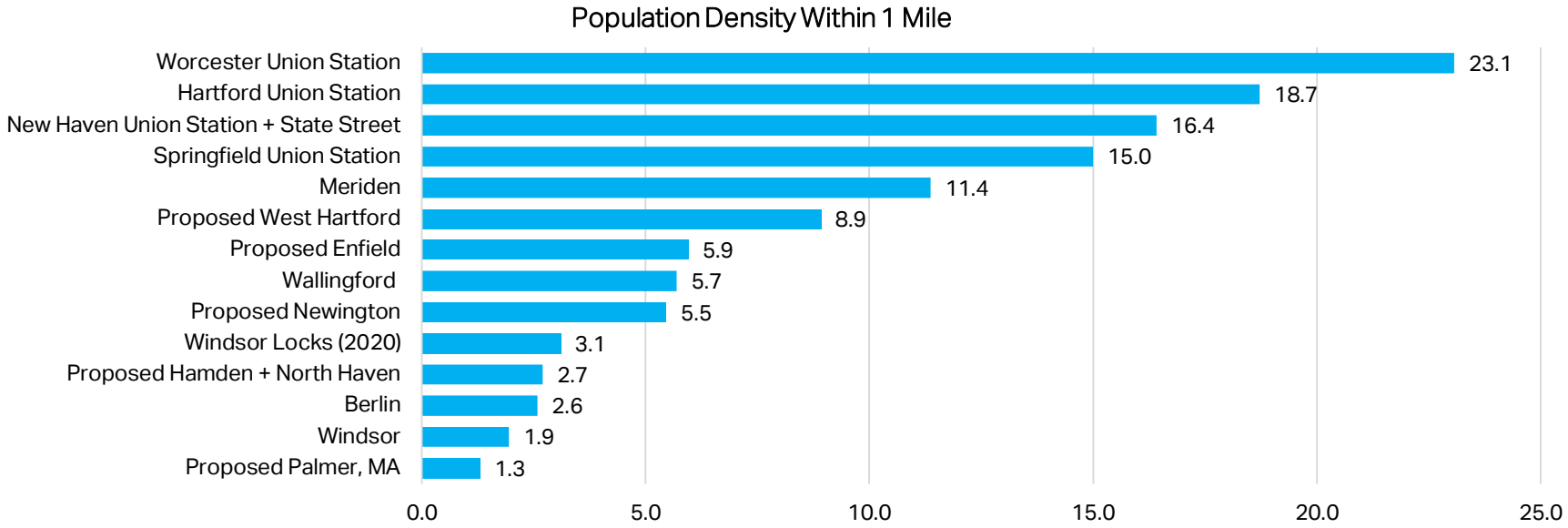
Meriden

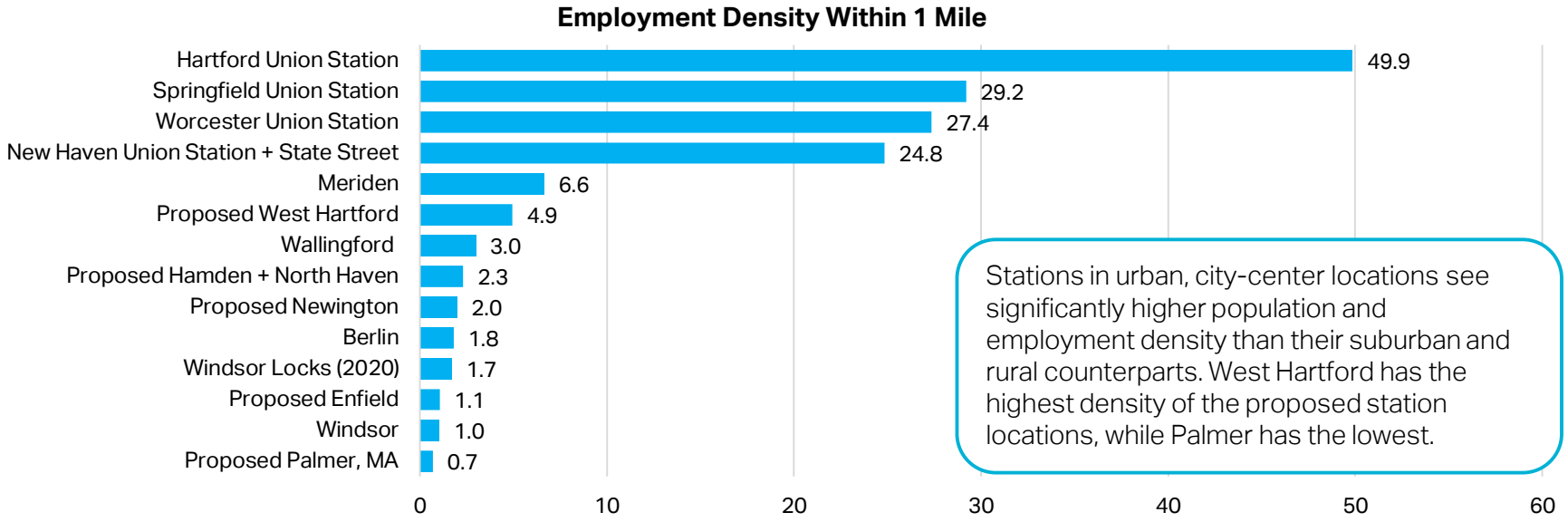


Enfield



Regional TOD Capacity

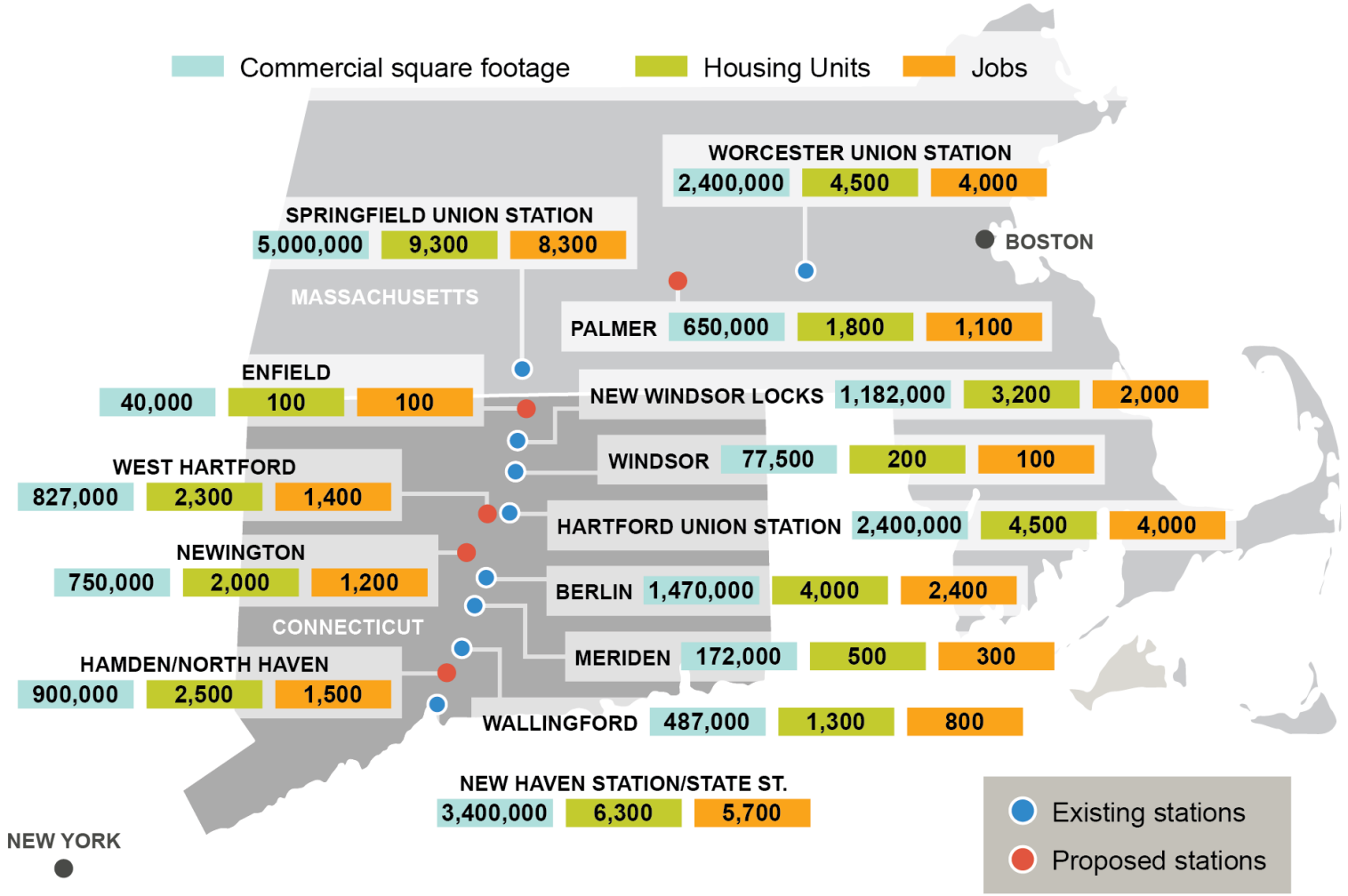




Stations in urban, city-center locations see significantly higher population and employment density than their suburban and rural counterparts. West Hartford has the highest density of the proposed station locations, while Palmer has the lowest.

Source: Urban Footprint, 2020

Regional TOD Capacity



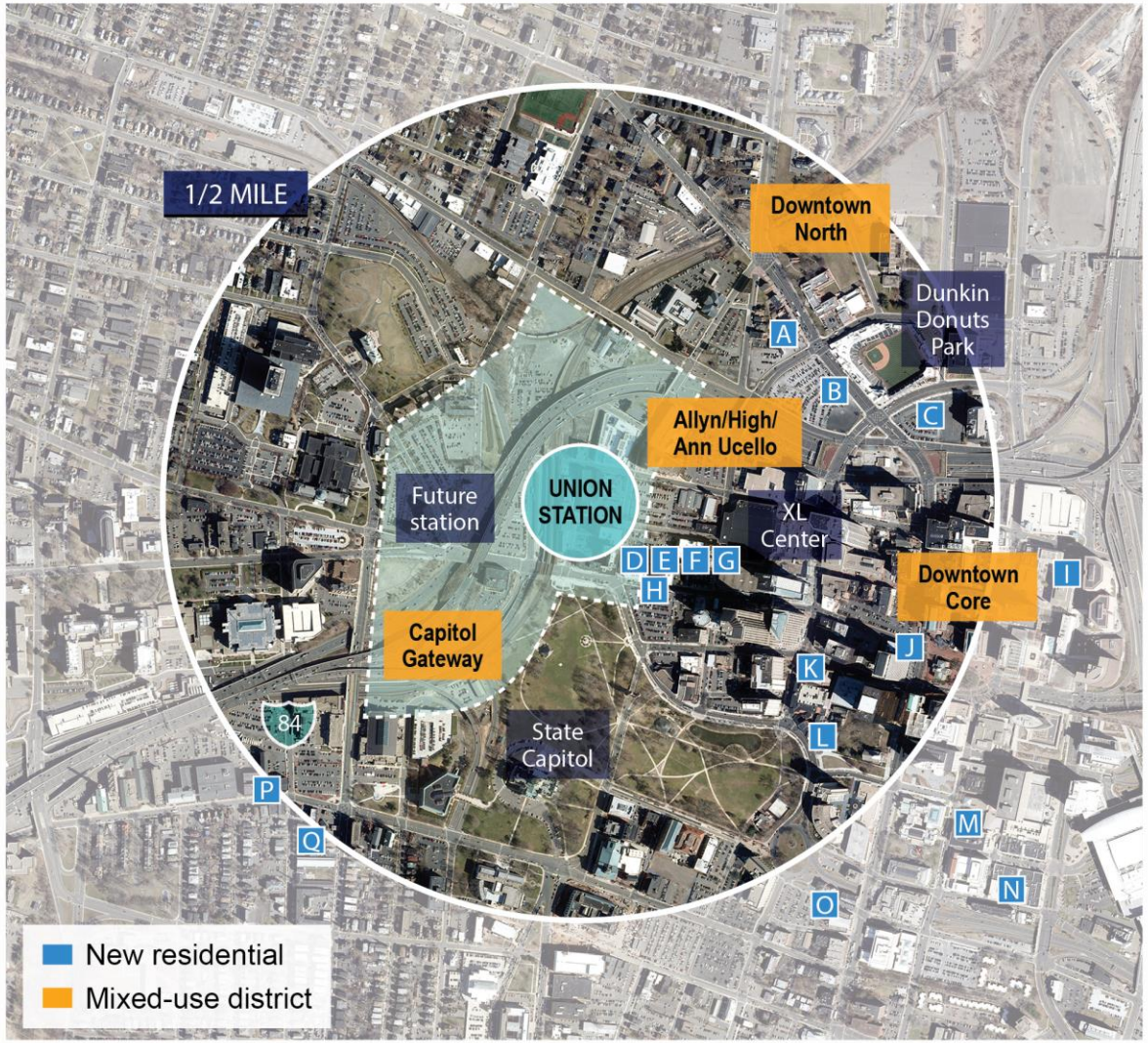
Sub-total, existing stations	16,600,000	33,800	27,600
Sub-total, proposed stations	3,200,000	8,700	5,300
GRAND TOTAL	19,800,000	42,500	32,900

SOURCE: URBAN FOOTPRINT, COSTAR, AECOM ANALYSIS

Regional TOD Capacity

New Haven Union Station + State Street

Hartford



Regional TOD Capacity

Springfield

Worcester

Economic and Fiscal Benefits

Direct Costs
Direct construction spending, covering construction labor, wages, materials and equipment for the East-West and Hartford Line. Costs are estimated at between $6.4 - $9.4 billion (2021 $USD) over an assumed 10-year construction period.

Indirect Benefits
The ripple effect of growth in 20,000 to 40,000 Metro Hartford-Springfield Jobs and construction of future TOD residential and commercial real estate. Input - output multipliers from EMSI are used.

Direct Benefit: Jobs
Growth of 20,000 to 40,000 Metro Hartford-Springfield future new jobs in professional services and other sectors incrementally over 30 years. Jobs are shown for Year 30, wage & output benefits are shown as 30-year totals.

Direct Benefits: TOD
Construction of future transit-oriented residential & commercial development is based on assumptions for construction costs, FAR, and capacity for development.

Fiscal Benefits
Estimated value capture generated by new TOD-linked property taxes and income taxes paid to future employees in construction, services, and other sectors. Cumulative benefits are framed over 30 years, in current 2020 $USD

Direct Economic Benefits

	Direct Benefits, Present Value	Conservative	Aggressive
Direct Economic Benefits, New Regional Jobs, Linked to Transit Improvements	New Regional Jobs, 30 Years	20,000	40,000
	Cumulative New Wages, 30 Years	$20,094,000,000	$40,187,000,000
	Cumulative New Regional GDP, 30 Years	$35,428,000,000	$70,856,000,000
Transit Oriented Development New Construction Investment, Present Value	TOD Construction Jobs (Full-Time Equivalent)	97,000	115,000
	Cumulative Construction Wages	$6,799,000,000	$7,463,000,000
	Cumulative Construction Investment	$11,332,000,000	$13,422,000,000
Fiscal Implications	Cumulative Property Taxes, 30 Years	$2,770,000,000	$3,290,000,000
	Cumulative Income Taxes, 30 Years	$1,055,000,000	$2,110,000,000
	Total Fiscal Benefits	$3,825,000,000	$5,400,000,000
Total Benefits, Cumulative, 30 Years	New Professional Services Jobs	20,000	40,000
	New Construction Jobs	97,000	115,000
	New Regional GDP	$46,760,000,000	$84,278,000,000
	New Fiscal Benefits	$3,825,000,000	$5,400,000,000

Indirect Economic Benefits

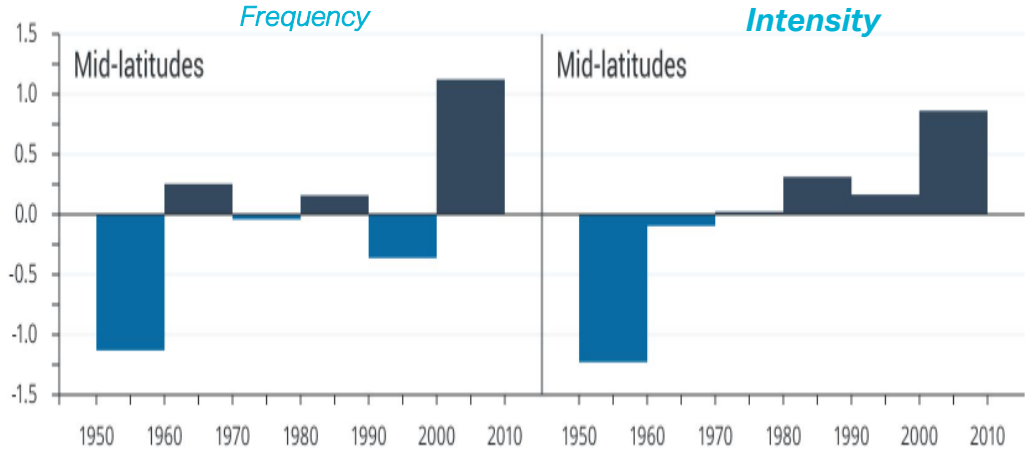
	Indirect and Induced Benefits	Conservative	Aggressive
Indirect / Induced Economic Benefits, New Regional Jobs, Linked to Transit Improvements	Jobs, Year 30	32,000	63,000
	Total Wages, Year 30, Present Value	$1,621,000,000	$3,242,000,000
	Regional GDP, Year 3, Present Value	$3,521,000,000	$7,041,000,000
Transit Oriented Development New Construction Investment, Present Value	Jobs, Year 30	133,000	158,000
	Total Wages, Year 30, Present Value	$5,268,000,000	$6,240,000,000
	Regional GDP, Year 3, Present Value	$11,628,000,000	$13,772,000,000
Total Benefits, Year 30	Jobs, Year 30	165,000	221,000
	Total Wages, Year 30, Present Value	$6,889,000,000	$9,482,000,000
	Regional GDP, Year 3, Present Value	$15,149,000,000	$20,813,000,000

Economic and Fiscal Benefits

Reconstruction of the Inland Route has important NEC resiliency implications linked to major storms and long-term sea level rise

- Up to 20% of the NEC will be vulnerable to storm surge by the end of the century.
- Fairfield, New Haven, Middlesex, and New London Counties have the largest percentage of land impacted (NEC Future, 2016).
- Re-construction of the Inland Route also provides system capacity for improvements to aging NEC bridge infrastructure

Nor'easter Frequency and Intensity for 30° to 60 ° North



Source: National Climate Assessment, U.S. Global Change Research Program